

CLAIMS

It is claimed:

1. A single phase motor driving unit comprising:

a first driving transistor supplying a single phase coil with a driving electric current in a certain direction;

a second driving transistor supplying said single phase coil with a driving electric current in the opposite direction; and

a recirculating section which recirculates the driving electric current for said single phase coil by controlling on-off timings of said first driving transistor and said second driving transistor in a predetermined period immediately before the direction of the driving electric current for said single phase coil changes.

2. The single phase motor driving unit according to claim 1, further comprising a recirculation diode for recirculating the driving electric current for said single phase coil.

3. The single phase motor driving unit according to claim 1, further comprising:

a comparison section which compares an absolute value of a sine wave signal obtained from a Hall device detecting a rotational position of a single phase motor and a reference value and outputs a timing signal corresponding to said predetermined period,

wherein said recirculating section controls on-off timings of said first driving transistor and said second driving transistor based on said timing signal.

4. The single phase motor driving unit according to claim 1, further comprising:

a detecting section which detects rotation and stop of said single phase motor and outputs a rotation signal and a stop signal,

wherein when said single phase motor cannot start, said recirculating section stops recirculating the driving electric current for said single phase coil until the output of said detecting section changes from the stop signal to the rotation signal.

5. The single phase motor driving unit according to claim 2, further comprising:

a comparison section which compares an absolute value of a sine wave signal obtained from a Hall device detecting a rotational position of a single phase motor and a reference value and outputs a timing signal corresponding to said predetermined period,

wherein said recirculating section controls on-off timings of said first driving transistor and said second driving transistor based on said timing signal.

6. The single phase motor driving unit according to claim 2, further comprising:

a detecting section which detects rotation and stop of said single phase motor and outputs a rotation signal and a stop signal,

wherein when said single phase motor cannot start, said recirculating section stops recirculating the driving electric current for said single phase coil until the output of said detecting section changes from the stop signal to the rotation signal.

7. The single phase motor driving unit according to claim 5, further comprising:

a detecting section which detects rotation and stop of said single phase motor and outputs a rotation signal and a stop signal,

wherein when said single phase motor cannot start, said recirculating section stops recirculating the driving electric current for said single phase coil until the output of said detecting section changes from the stop signal to the rotation signal.

8. A method of driving a single phase motor in a single phase motor driving unit which has a first driving transistor supplying a single phase coil with a driving electric current in a certain direction and a second driving transistor supplying said single phase coil with a driving electric current in the opposite direction, comprising:

recirculating the driving electric current for said single phase coil to decrease over time in a predetermined period immediately before the direction of the driving electric current for said single phase coil changes.

9. An integrated circuit including a single phase motor driving unit according to any one of claims 1 through 7.

10. A single phase motor driving unit comprising:

first switching means for supplying a single phase coil with a driving electric current in a certain direction;

second switching means for supplying said single phase coil with a driving electric current in the opposite direction; and

a recirculating section which recirculates the driving electric current for said single phase coil by controlling on-off timings of said first switching means and said second switching means in a predetermined period immediately before the direction of the driving electric current for said single phase coil changes.

11. The single phase motor driving unit according to claim 10, further comprising a recirculation diode for recirculating the driving electric current for said single phase coil.

12. The single phase motor driving unit according to claim 10, further comprising:

a comparison section which compares an absolute value of a sine wave signal obtained from a Hall device detecting a rotational position of a single phase motor and a reference value and outputs a timing signal corresponding to said predetermined period,

wherein said recirculating section controls on-off timings of said first switching means and said second switching means based on said timing signal.

13. The single phase motor driving unit according to claim 10, further comprising:

a detecting section which detects rotation and stop of said single phase motor and outputs a rotation signal and a stop signal,

wherein when said single phase motor cannot start, said recirculating section stops recirculating the driving electric current for said single phase coil until the output of said detecting section changes from the stop signal to the rotation signal.